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via email: disb@deltacouncil.ca.gov

Delta Independent Science Board
980 Ninth Street, Suite 1500
Sacramento, CA 95814

Subject: Water Quality Science in the Sacrament-San Joaquin Delta, Part I: Chemical Contaminants and Nutrients

Dear Delta Independent Science Board (DISB) members:

We hope it is still timely to provide you with Restore the Delta's comments concerning this important DISB review of water quality science in the Delta from last December 2017. Restore the Delta has had to devote considerable amounts of time to our participation in the Change Petition proceeding on California WaterFix before the State Water Resources Control Board (SWRCB) and are only now able to provide you with our comments on your Board's water quality review.

Restore the Delta advocates for local Delta stakeholders to ensure that they have a direct impact on water management decisions affecting the water quality and well-being of their communities, and water sustainability policies for all Californians. We work through public education and outreach so that all Californians recognize the Sacramento-San Joaquin Delta as part of California's natural heritage, deserving of restoration. We fight for a Delta whose waters are fishable, swimmable, drinkable, and farmable, supporting the health of the San Francisco Bay-Delta Estuary, and the ocean beyond. Our coalition envisions the Sacramento-San Joaquin Delta as a place where a vibrant local economy, tourism, recreation, farming, wildlife, and fisheries thrive as a result of resident efforts to protect our waterway commons.

As Delta advocates, we rely heavily on scientific research output, data, and synthesis to inform our positions. Water quality data is therefore vital. We have commented to you and the Delta Science Program on science matters, including the recent science action agenda, and recent prospectuses concerning the Interagency Ecological Program and water supply reliability. We appreciate the opportunity to comment on the DISB water

quality review, and we understand that its scope is focused on chemical contaminants and nutrients.

Communicating Delta Water Quality to Stakeholders and the Public

While challenging, we think it is important for the DISB to summarize the range of stakeholders in the Delta and its watershed as important to the scope of consumers of water quality data, science, and syntheses. The DISB review gestured in the direction of important stakeholders, but punted its opportunity to systematically define who those are. While many of the consumers of such data and syntheses are water management agencies and regulators, many others (such as Restore the Delta and other NGOs) would appreciate more accessible and frequent water quality data and analyses that interpret the meaning and significance of water quality research, monitoring, conceptualization, and enforcement of water quality objectives—in part to ensure we have a common understanding about Delta water quality that is well-distributed to the public. Such understandings are important to the lay public, especially when it comes to public health contaminants of concern like methylmercury, selenium, and harmful algal blooms. Greater clarity about those stakeholders will also help clarify the constituents for water quality monitoring and research work and could even perhaps help identify sources of funding and institutional support for the monitoring and research entities involved.

Illuminating the Status of Delta Beneficial Uses

Restore the Delta commented last year on the Delta Science Action Agenda that "minimal investments [have] occurred in social and behavioral science matters embedded in Delta place issues." The water quality science review appears to be silent on which beneficial uses (reflective of many stakeholder constituents) should be monitored as part of the overall monitoring program. Restore the Delta conservatively estimated in our California WaterFix change petition part 1B testimony that between 24,000 and 40,000 unique individuals (derived from Department of Fish and Wildlife fishing license data; see exhibits RTD-229 and RTD-230) go fishing in the Delta annually. While Dr. Fraser Shilling conducted surveys many years ago concerning such recreational or subsistence activity, there is no consistent monitoring effort to sample at known locations with regular frequency (not unlike how the various fish surveys are conducted like Summer Townet Survey and the Fall Midwater Trawl).

Such surveys should develop longitudinal data (through time) on how many human beings are fishing in the Delta estuary, what fish they catch, where they catch fish, whether the waters in which they fish are subject to state health advisories, whether these fishing activities expose human beings to DISB-defined contaminants, and what levels of contaminants may be ingested and whether those levels are safe. Such information is crucial for water regulators such as the Office of Environmental Health and Hazard Assessment (OEHHA), the Division of Safe Drinking Water, and the State Water Resources Control Board generally to determine whether beneficial uses are or may be impaired, from what constituents, and what interventions may be necessary to ensure public safety and health. Regular human social and ecological monitoring

activity is crucial to help these and other agencies meaningfully assess whether such beneficial uses as recreation or subsistence fishing activities are impaired.

Interacting Stressors in the Delta

We appreciate that the DISB water quality science review noted the relationship of a biological stressor like *Potamocorbula amurensis* to a chemical stressor, selenium. RTD's Tim Stroshane and other parties' witnesses testified in the Water Board's California WaterFix change petition proceeding concerning the threat selenium poses to Delta ecology. This is potentially a public health issue, not just an ecosystem health issue because of the fact that green and white sturgeon prey on benthic clams like *Potamocorbula* and are themselves prey for human anglers. At this time, we are unaware of any systematic monitoring or studies that seek greater understanding of these human-ecosystem interactions. The above mentioned longitudinal human survey should help address this concern. We hope the DISB can help ensure that such direct relationships between ecosystem and public health can become better understood through greater ecosystem surveillance and regular sampling of anglers' catches of sturgeon and other game fish for selenium tissue concentrations.

Protecting Human Recreation and Public Health

Similar regular surveys should be conducted during spring through fall seasons with humans engaging in water-contact recreation (e.g., swimming, water skiing, wading, playing with dogs) in Delta channels are potentially exposed to contaminants, and whether these beneficial uses may be at risk of impairment from such contaminants. Again such regular monitoring of human activity will be essential to ensure that water regulators have accurate scientific data from which they may evaluate the effectiveness of heretofore unstudied beneficial uses. In addition, while the water quality science review summary of algal toxins is sound, we wish to bring to your attention that many relevant studies were summarized in testimony and included as evidence to the Water Board's evidentiary proceeding on the California WaterFix change petition. We recommend you see testimony (and accompanying exhibits) provided by in particular witnesses Erik Ringelberg and Contra Costa County public health nurse Linda Turkatte.

Contributing to Environmental Justice Outcomes

The water quality science review—and the action agenda to come from it—is also an opportunity to increase broad understanding of the connection between overall public health and environmental justice communities in the Delta. Regular frequent sampling of human activities in beneficial uses in Delta waters should at least inquire the race or ethnicity of those informants contacted by researchers. The reason for this is that, as we wrote to the Delta Science Program about its proposed Action Agenda in May 2017, environmental justice communities are a desperately needed research priority. Restore the Delta documented Delta environmental justice communities in our Part 1B testimony to the Water Board's California WaterFix Change Petition proceeding (see our exhibits RTD-205 through -207 for demographics from the American Community Survey at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/restore_the_delta.html).

Finally, in the next product on this subject from the DISB, we hope you will consider providing a synthesis that describes contemporary baselines for chemical contaminants and nutrients in Delta waters, including loadings and concentrations, pathways of interactions, ecological mobilizations and connections, and trends (e.g., worsening or improving and why). The current water quality science review is to some extent scoped as “inside baseball” for direct producers and agency science consumers of water quality data. But the DISB, as an advisory body to a public agency like the Delta Stewardship Council should, in Restore the Delta’s view, go the extra mile and produce a public-friendly document that informs the public about the threats and opportunities the DISB sees in the existing level of water quality monitoring and research now under way and for what investment, an even more comprehensive monitoring and research program might return for water decision-makers and the public alike.

Again, we ask you to forgive our tardy comment letter on the DISB’s water quality science review, and we hope it is still somehow useful to you. And once again, thank you for the opportunity to comment on these important topics.

Sincerely,

	
Barbara Barrigan-Parrilla Executive Director	Tim Stroshane Policy Analyst

cc: Michael Tubbs, Mayor, City of Stockton
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